

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 03-252177

(43) Date of publication of application : 11.11.1991

(51)Int.Cl.

H01L 33/00
H01L 21/205

(21)Application number : 02-050211

(71)Applicant : TOYODA GOSEI CO LTD
TOYOTA CENTRAL RES & DEV LAB
INC
UNIV NAGOYA
RES DEV CORP OF JAPAN

(22)Date of filing : 28.02.1990

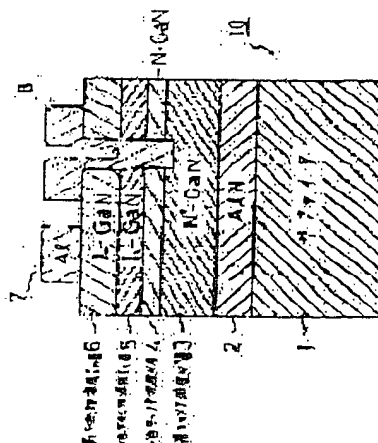
(72)Inventor : MANABE KATSUhide
MABUCHI AKIRA
YAMAZAKI SHIRO
KOIDE NORIKATSU
HASHIMOTO MASAFUMI
AKASAKI ISAMU

(54) LIGHT EMITTING ELEMENT OF GALLIUM NITRIDE COMPOUND SEMICONDUCTOR

(57)Abstract:

PURPOSE: To increase blue light emitting intensity of a light emitting diode by forming a double layer structure of a low carrier concentration layer and a high carrier concentration layer sequentially from the side of connecting an N-type layer to an I-type layer, and forming a double layer structure of a low impurity concentration layer having relatively low concentration of P-type impurity and a high impurity concentration layer having relatively high concentration of P-type impurity sequentially from the side of connecting an I-type layer to an N-type layer.

CONSTITUTION: A sapphire board 1 is vapor etched, an AlN buffer layer 2 is formed, a high carrier concentration layer 3 made of GaN is formed, and then an N⁺ type low carrier concentration layer 4 made of GaN is formed. Then, a low impurity concentration IL layer 5 of relatively low concentration ($5 \times 10^{19}/\text{cm}^3$) of Zn concentration made of GaN is formed, and then a high impurity concentration IH layer 6 of relatively high concentration ($2 \times 10^{20}/\text{cm}^3$) of Zn concentration made of GaN is formed.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

Number of appeal against examiner's decision